

SEMICONDUCTOR LASER WITH A TAPERED RIDGE

ABSTRACT OF THE DISCLOSURE

A semiconductor ridge laser with a tapered ridge is disclosed. The tapered ridge is designed to provide for both gain-medium amplification and mode conversion amplification, the latter resulting in a higher kink power than is obtainable with gain medium amplification alone. The power and lateral mode content of the output beam is determined by the ridge parameters, which include length, width, number of sections and degree and type of taper for the tapered sections. The output beam can be made to have a profile that is more compatible with the lateral modes on an optical fiber than a conventional highly astigmatic output beam by including power in the higher-order lateral modes as well as in the fundamental lateral mode.

15